UHER

VARIOCORD 263 STEREO

The UHER Variocord 263 Stereo has been produced for all tape recorder amateurs who appreciate particularly convenient and simple operation, whereas at the same time not wishing to miss the manifold facilities of such instruments. With a few actions your new tape recorder can be transformed from a two-track system into a four-track system and vice versa. In this manner the advantages of both methods are available in one instrument without restrictions. The UHER "Sigma" level control allows the lesser skilled too, to produce stereo recordings with perfect level control at the first attempt, since indeed only one indicating instrument has to be observed and one setting control operated. Anyone who wishes to make life even more easy need only use the automatic level control, which may at any time be inserted in the instrument even at a later stage in the form of a subassembly.
Two inputs which can be separately regulated and mixed facilitate the production of impressive fade-outs and fade-ins.
The newly developed drive unit works in any position and due to the UHER tape tension comparator possesses tape running properties which as far as home studio equipment is concerned may be considered as sensational.
All these properties will greatly assist you not only in becoming familiar with your new UHER Variocord 263 Stereo in next to no time, but also to achieve superb results with ease and certainty.

Operating Controls and their Functioning

Kindly also refer to the illustration folded away at the end of the operating instructions.

Tape Speed Selector ①
UHER Variocord 263 Stereo possesses three tape speeds, which are selected with this switch. It simulaneously serves for switching on the tape recorder. It is finally ready for operation only after the tape has been placed in position.

Function Switch ②
This selector is used for changing over the tape recorder from mono to stereo working and for selecting the desired track with mono working.

Input Selector ③
serves for selecting the tape run functions of "STOP", "PAUSE", "START".

Slide Key ④
serves for operating the rapid forward and return feed of the tape. The key can only be operated, if the input selector is in position "STOP".

Tape Counter ⑤
serves for the marking of any desired point on the tape during recording or playback. Every time the instrument is used, press the zero setting key for returning the counter mechanism to "0000".

"RADIO/MICRO" Control ⑥
for setting the correct level when recording with a microphone, radio set or record player.

"PHONO" Control ⑦
for setting the correct level when recording with record players incorporating a built-in amplifier, as well as for recordings from a second tape recorder.

"TONE" Control ⑧
for selecting the desired tone quality for playback and when monitoring the recording.

Twin Control "VOL" ⑨
for setting the volume of playback or also of monitoring during recording. The individual channels may optionally be regulated together or separately.

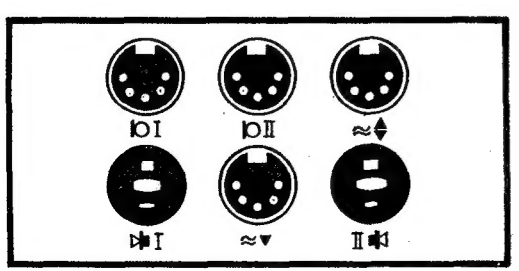
"MICRO" Key ⑩
With recordings using microphones, the microphones are switched on by pressing the key. The key latches and is released again by renewed pressure.

Recording Key ⑪
Operating this key changes the instrument over to recording. The key is locked by the subsequent rotation of the input selector ③.

Connecting Sockets

The connecting sockets described below are accommodated on the underside of the tape recorder.

Sockets "Microphone" ⊂ I ⊂ II
For the direct connection of low-impedance microphones (200 to 500 ohms).
With mono working, the microphone is always connected to socket ⊂ I. With stereo working, the left-hand microphone is connected to socket ⊂ I and the right-hand microphone to socket ⊂ II.



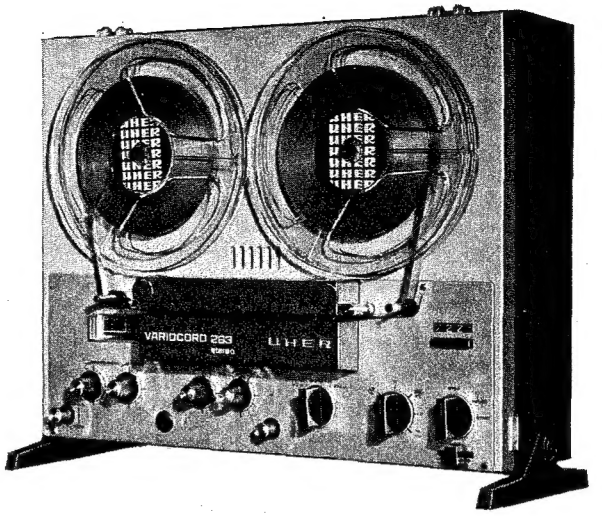
Socket ≈ (combination type of socket for input and output according to DIN specification)
for the connection of mono and stereo radio sets with a standard socket with the use of audio lead, type K 541 for radio recording and reproduction, as well as for the connection of mono or stereo record players and tape recorders.
Input voltage: 1.2 mV up to 600 mV.
Input impedance: 47 kOhms
(Socket contacts 1 and 4).
Input voltage: 45 mV up to 7 V.
Input impedance: 1 MOhm
(Socket contacts 3 and 5).
Output voltage with playback:
1,0 V.
Output impedance: 15 kOhms
(Socket contacts 3 and 5).

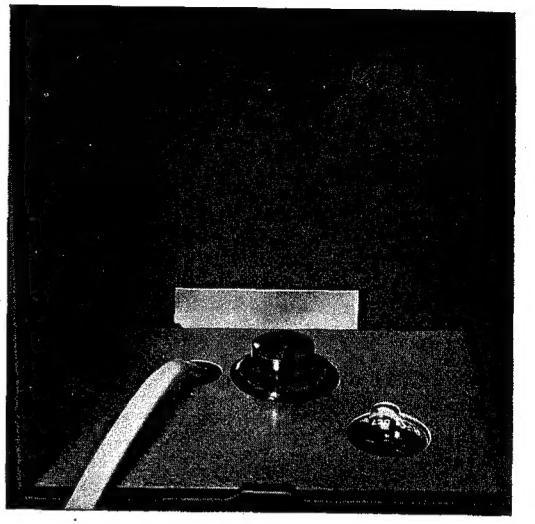
Socket ≈
for connecting mono and stereo record players with a built-in pre-amplifier, mono and stereo tape recorders, as well as sound sources with a voltage output between 85 mV and 250 mV, input impedance: 100 kOhms.

Socket I
for connecting the left-hand supplementary loudspeaker.

Socket II
for connecting the right-hand supplementary loudspeaker. When using the dynamic twin earphones W 671, the plug marked in yellow is inserted into the socket I and that marked in red into socket II.
Matching impedance of the loudspeaker:
4 — 8 ohms.
Matching impedance for headphones:
200 ohms or more.

Just a few actions and the tape recorder is operational





1. Setting up

The Variocord 263 Stereo will work both in the vertical and the horizontal position. For suspending the instrument from the wall, two hooks have been provided on the underside of the case. The carrying handle may be removed after slackening the two fixing screws. In their place the feet supplied with the instrument may be attached with the aid of the fixing screws.

2. Mains Connection

The power cord will be found in a compartment in the base of the case. Before connecting the instrument to the mains, check the voltage of the mains. If necessary, set the voltage selector in the base compartment to the prevailing mains voltage, using a coin. In the 200—240 V setting of the voltage selector the instrument can be operated on mains voltages between 200 and 240 V and in setting 100—130 V of the voltage selector on voltages between 100 and 130 V 50 Hz ~. When operating the instrument on mains voltages between 200 and 240 V, use a fuse for 0,4 A and between 100 and 130 V, one of 0,8 A. When replacing fuses, the fuse plug in the compartment in the base of the case is unscrewed with a coin and the fuse-insert exchanged for the required type. **When changing over the voltage setting and the fuses, the instrument must never be connected to the mains.**

SPECIAL NOTE

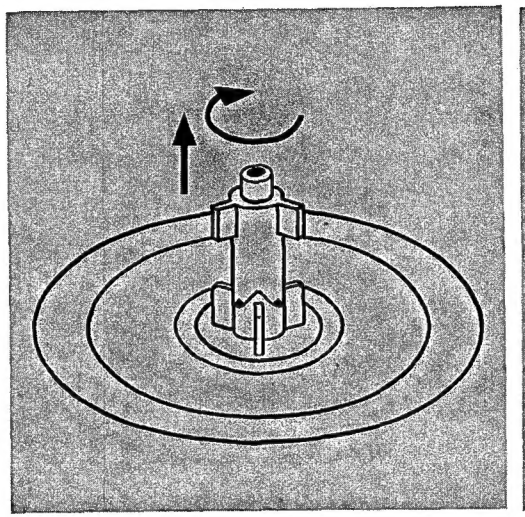
The Variocord 263 Stereo is equipped with an electromechanical end-of-tape-switch, which will also switch off safely even if the tape does not incorporate a cutout strip. It follows that the instrument can only be operated when a tape has been placed in position.

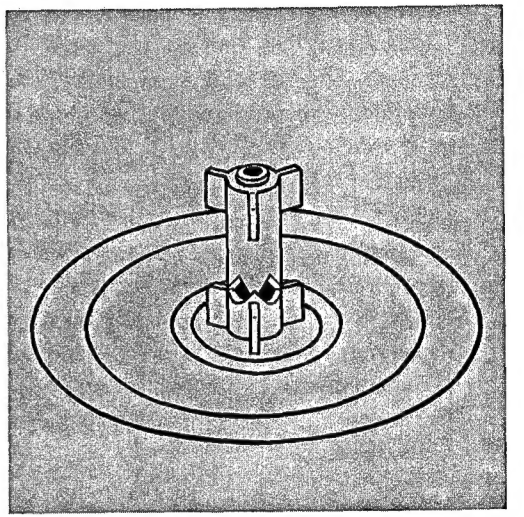
3. Inserting the Tape

Before placing the tape spools in position, pull up the two three-pronged mandrels of the spool disc and turn it in such a manner that prongs of the stationary and the moving part are above each other. The full spool is now placed upon the left-hand and the empty spool on the right-hand coil disc. After placing the spools in position, the two mandrels are turned to the right or left until they click in below. This prevents the spools from dropping off. Now withdraw some 10 inches of tape from the left-hand spool, insert taughtly into the tape guide slot and wind on the start with about 1 to 2 turns onto the right-hand spool.

4. Selecting the Tape Speed and Switching on the Instrument

Set the speed selector and the mains switch ① to the required tape speed. This switches on the instrument at the same time. The illumination of the indicating instrument lights up. The instrument is immediately ready for operation. The table below provides information concerning the tape to be used for various purposes.





Tape speed	Frequency range	Application
1 7/8 ips	30 — 8 000 cps	Recordings requiring long running times and where requirements are not high in respect of tone quality, although it is already very good.
3 3/4 ips	30 — 15 000 cps	Hi-Fi recordings where the requirements in respect of tone quality are high.
7 1/2 ips	30 — 20 000 cps	Hi-Fi recordings where the requirements are highest in respect of tone quality.

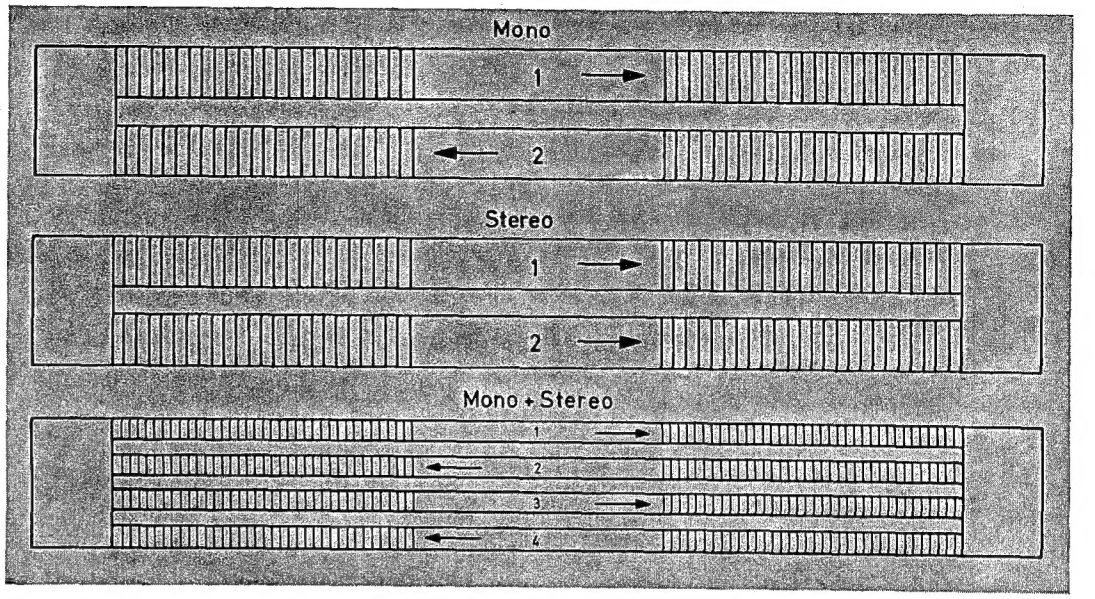
Setting the Correct Recording Level

The setting of the correct recording volume is called "level control" and in the case of the UHER Variocord 263 Stereo is extremely simple and convenient with the aid of the "Sigma" recording level control. Irrespective whether a mono or stereo recording is involved, there is only one control knob to be operated and one instrument to be observed. In this manner even the lesser skilled may make recordings with the correct level right away. Anyone who wishes to simplify matters still further, will use the automatic level control (refer to section dealing with "Auto-

matic Recording Level Control"). The control "Radio/Micro" or "Phono" is turned to the right until with the loudest passages of the sound to be recorded the pointer of the instrument swings to the figure "0" of the scale division. When the pointer swings as far as the red range of the scale, this is called „overloading" and will cause distorted reproduction. Should the pointer not reach the figure "0" on the scale even with the loudest passages of the sound to be recorded, this will show up during subsequent playback also as indistinct sound and possibly as background noise.

Two-track and Four-track Operation

The sound-head assembly of the Variocord 263 Stereo is interchangeable (refer to section dealing with "Interchanging the Sound-head Assembly"). This permits the instrument being optionally operated with the two-track or the four-track system. Two-track recordings may be played back without any trouble using the four-track method. On the other hand it is not possible to play back four-track recordings using the two-track method.
The illustration explains the direction of the tape feed and the position of the tracks with the two-track and four-track methods.

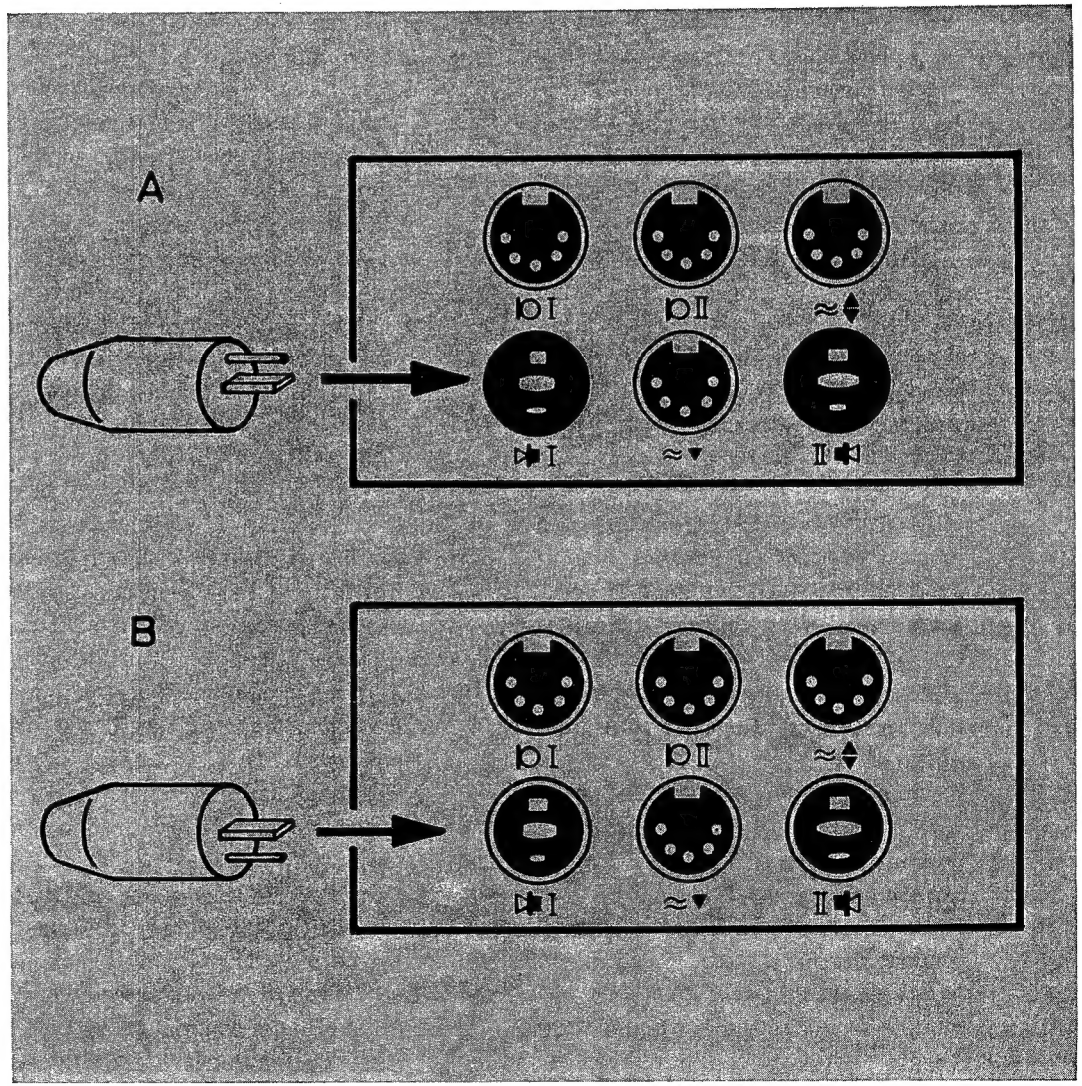


Four-track Mono Operation

Recording with the Microphone

1. Set speed selector ① to the required speed.
2. Set function switch ② to "Mono 1".
3. Connect microphone to microphone socket ⍝ I.
4. Press key "Microphone" ⑩ until it latches.
5. Turn knob of control "Vol" ⑨ to the left.
6. Reset counter by pressing the zero reset key to "0000".
7. Press red recording key ⑪ and hold down. Then move input selector ③ to setting "Pause".

8. Set correct recording level.
9. When commencing to record, move input selector ③ to position "Start", when tape feed and the recording will commence.
10. Should the recording be interrupted, then move the input selector to setting "Pause".
11. The recording may either be monitored via the built-in loudspeaker, supplementary speaker or earphone. Supplementary loudspeakers or earphones are connected to the sockets ◁ I and ◁ II. In this connection the built-in loudspeakers may either be permitted to remain in circuit (fig. B) or to be disconnected (fig. A), depending upon the manner in which the plugs were inserted in the sockets. Volume and tone control for monitoring is effected via the controls "Vol" ⑨ or "Tone" ⑧. When making microphone recordings observe that the monitoring volume is only chosen in such a manner that howling (acoustic feedback) does not quite occur. If the microphone is being operated in another room or at a greater distance from the instrument, monitoring at any volume is permissible. This also applies, if earphones are being used for monitoring.
12. End of recording, move input selector ③ to setting "Stop".
13. When the tape has completely run through, then exchange the full right-hand spool for the empty left-hand spool and continue



with recording. Should the tape once again have completely run through, move the function selector ② to position "Mono 2", exchange the spools as described and again continue with recording. After a renewed running through of the tape, the spools are again interchanged and now the last fourth track is available for recording.

Recording of Radio Broadcasts

1. Set the required tape speed on the speed selector.
2. Using the function selector ② choose the desired track (for recording on track 1 or track 4, the position "Mono 1", for recording on track 2 or track 3, the position "Mono 2") as described under "Recording with the Microphone". **The key "Micro" ⑩ must be situated in its upper terminal position.**
3. Connect the radio set with the audio lead, type K 541 from its socket for tape recording and tape playback to the socket of the Variocord 263 Stereo.
4. Switch on the radio set and tune into the desired station.
5. Press the recording key ⑪, hold it and move the input selector ③ to the position "Pause".
6. Set the counter to "0000" by pressing the zero return key.
7. Set the correct recording level with the knob of control "Radio/Micro".
8. Recording is started by moving on the input selector to position "Start".
9. Monitoring of the radio recording may take place as already described under "Recording with the Microphone".
10. Interrupting, terminating and recording on the other tracks as described under "Recording with the Microphone".

Recording of Mono Phonograph Discs

1. Connect record player. Record players with a crystal pickup are connected to socket, whereas record players with a magnetic or dynamic pickup and built-in preamplifier are connected to sockets or. The direct connection of magnetic or dynamic pickups without an amplifier is not practicable.
2. Switch on record player and set down the tone arm.
3. Press key "Recording" ⑪, hold it and move input selector ③ to position "Pause".
4. The correct recording level in conjunction with a record player connected to socket is set with the control "Radio/Micro" ⑥ and in conjunction with a record player connected to socket with control "Phono" ⑦.
5. After this, test recording-level control, the tone arm is again set down into the starting groove of the disc and recording commenced by rotating the input selector ③ to position "Start".
6. Monitoring, interrupting and terminating, as well as recording on the other tracks is carried out as described above.

Recording from a Second Tape Recorder

Should tape recordings be transferred from another instrument, this form of "copying" is carried out as follows:

1. Using the audio lead, type K 541, make a connection between socket for recording and reproduction "Radio" of the instrument used for playback and the socket or of the Variocord 263 Stereo.
2. The reproducing instrument is switched to "Playback" in accordance with its Operating Instructions and the Variocord 263 Stereo to "Record".
3. The correct recording level is effected with control "Radio/Micro" ⑥ with a connection to socket or with control "Phono" ⑦ with a connection to socket.

The Recording of Telephone Calls

Telephone calls can be recorded with the telephone adapter, type A 261. Since the Variocord 263 Stereo is a fully-transistorized tape recorder, you may use it for recording telephone calls without waiting for a warming-up period immediately after switching on.
The telephone adapter is connected to socket ⏃. The recording level is set with control "Radio/Micro" ⑥. The telephone call may be monitored via the built-in loudspeakers.
For this purpose rotate the upper knob of the twin control to the right before a disturbing howl occurs due to acoustic feedback. This will also allow other persons to listen-into the telephone call, if desired. Further details will be found in the Operating Instructions for the telephone adapter.

Playback

The playback of all mono recordings may take place either via the built-in loudspeakers, a radio set, amplifier or also via external speakers or earphones. The volume is selected by the common rotation of the two knobs of the twin control "Vol" ⑨. In case of need it is also possible to regulate individually the volume of the loudspeakers or the right-hand or left-hand section of the earphones by operating the control knobs separately.

Playback via Built-in Loudspeakers

1. Select tape speed.
2. Set the required track (position "Mono 1" track 1 or 4, position "Mono 2" track 2 or 3) with the function selector ②.
3. Move input selector ③ to position "Start".
4. Adjust the desired volume with control ⑨ and the tone quality desired with control ⑧.
5. Interrupting and terminating of playback as under "Recording".

Playback via Radio Sets or Amplifiers

1. A connection is made from socket ⏃ of the UHER Variocord 263 Stereo, using the audio lead, type K 541 to the corresponding input of the radio set or amplifier.
2. Switch the radio set or amplifier to "Tape Recorder".
3. Set the input selector ③ to position "Start". Tape feed and playback commence. The required volume is set with the volume control of the radio set or the amplifier. The built-in loudspeakers of the Variocord 263 Stereo may optionally be allowed to continue operating or be disconnected by rotating both knobs of the twin control to the left ("Vol" ⑨).

Playback via Supplementary Loudspeaker or Earphones

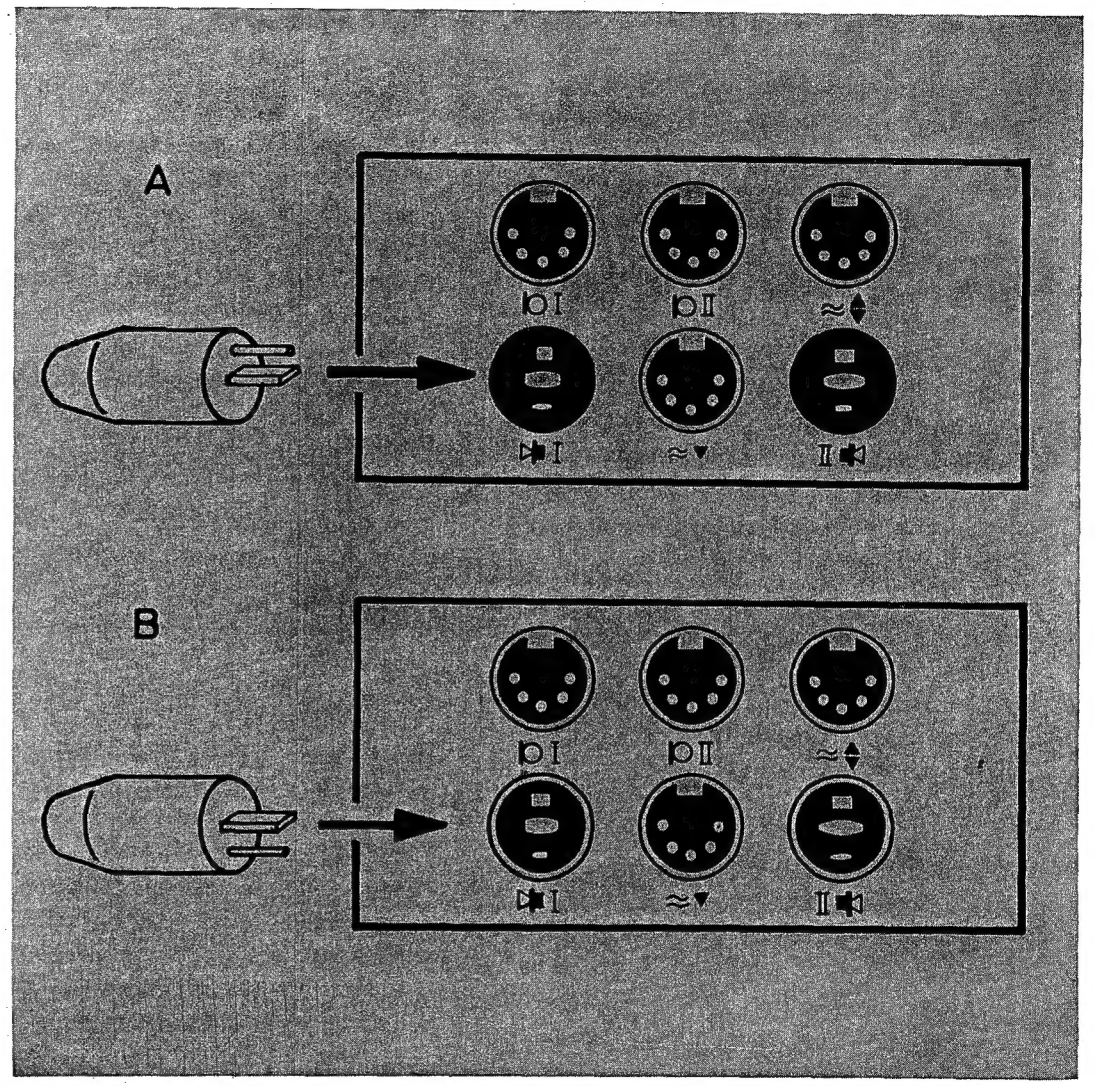
External speakers with a matching impedance of 4 to 8 ohms and a minimum loading capacity of 4 watts continuous audio output can be connected to sockets ⏄ I and ⏄ II.
According to the manner in which you insert the connecting plug into the socket, the built-in loudspeaker in use will be disconnected (fig. A) or continues to operate (fig. B).
Earphones may also be connected to sockets ⏄ I and ⏄ II, e.g. the stereo earphones, type W 671. Here again, the built-in loud-

speakers may continue to operate or be disconnected. In both cases volume control and tone control are carried out with the controls "Vol" ⑨ or "Tone" ⑧.

Special Note. When operating the tape recorder with supplementary loudspeakers, make certain that the matching impedance of each individual loudspeaker is not less than 4 ohms. A shorting of the loud-speaker leads must be avoided under any circumstances.

Operating the Mono Two-track System

By interchanging the sound-head assembly (see section on "Interchanging the Sound-head Assembly"), the Variocord 263 Stereo can be changed into a two-track instrument with just a few actions. Operating the instrument for recording and playback is effected in exactly the same manner as described under Mono Four-track Operation. The only exception to be observed is that the function selector ② must always remain in the position "Mono 1" during recording and playback. Once the tape has run off, the spools are exchanged and recording or playback continued on track 2.



Operating the Stereo Four-track System

When operating the stereo system, two tracks are simultaneously employed in each instance for recording and playback. The tape may, therefore, be used again after the first passage of the tape and the exchanging of the spools.

Recording with a Microphone

1. Select the required tape speed.
2. Set the function selector ② to position "Stereo".
3. Connect the microphone. The left-hand microphone is connected to socket ⏀ I, the right-hand one to socket ⏀ II.
4. Press key "Micro" ⑩, making it latch.
5. Press key "Recording" ⑪, hold it and move the input selector ③ to position "Pause".
6. First of all rotate both knobs of the twin control "Vol" ⑨ hard over to the left.
7. Rotate control "Radio/Micro" ⑥ as far to the right until the pointer of the instrument swings to the "0" mark on the scale.
8. The tape feed and the commencement of the stereo recording are started by rotating the input selector ③ to position "Start".
9. For monitoring, both knobs of the twin control "Volume" ⑨ are jointly rotated.

All other operations of the instrument are carried out as with Mono Microphone Recording.

Recording Stereophonic Radio Broadcasts

Switch the function selector ② to position "Stereo". All other operations of the instrument do not differ from those for mono radio recordings due to the provision of the UHER "Sigma" recording level control. Monitoring is effected either via the loudspeakers of the receiving set or also via the built-in loudspeakers or the supplementary loudspeakers or earphones belonging to the Variocord 263 Stereo. Choice of volume in the last mentioned case is effected by simultaneous operation of the two knobs of control "Vol" ⑨.

Recording from a Second Stereo Tape Recorder

Connection and operation of tape recorders are the same as described under mono operation. The same hint regarding the monitoring volume should be applied as previously mentioned.

Stereo Playback

The two loudspeakers of the instrument already offer really satisfactory stereo reproduction. Fullest efficiency will, however, only be developed by your UHER Variocord 263 Stereo with the connection of two external loudspeakers or when operated in conjunction with stereo radio sets or stereo amplifier systems.

Playback via Built-in Loudspeakers

Operation and handling of the instrument as described under mono operation. The function selector ② is in position "Stereo". The volume of the right-hand and the left-hand loudspeaker may, as required, be individually set by the separate operation of the individual knobs of the twin control "Vol" ⑨ — (balance control).

Playback via Supplementary Loudspeaker or Stereo Headphones

1. The left-hand loudspeaker is connected in such a manner to socket 🕩 I and the right-hand loudspeaker to socket 🕩 II so that the built-in speakers are disconnected. When connecting the stereo earphones, type

W 671, the plug with a yellow marking is inserted in socket 🏷 I and the plug with a red marking into socket 🏷 II, and again this disconnects the built-in loudspeakers. The stereo earphones are slipped on in such a manner that the lead is connected to the left-hand earpiece.

2. All further operations are effected in the same way as with playback via the built-in speakers.

Special Note: When working with supplementary loudspeakers, observe that the matching impedance of each individual speaker must not be less than 4 ohms. Short-circuiting of loudspeaker leads must be avoided under any circumstances.

Playback via Stereophonic Radio Sets or Stereo Amplifiers

A connection is made with audio lead, K 541 between socket 🔊 of the UHER Variocord 263 Stereo and the socket for tape recorders of the stereophonic radio set or the stereo amplifier equipment. All further operations are effected in the same manner as described under mono operation.

Stereo Two-track Operation

With stereo operation two tracks are simultaneously employed for recording and playback. With two-track operation, therefore, the tape has been fully utilized after one passage through the recorder and must be respooled after the termination of either recording or playback.

Automatic Recording Level Control

The tape recorder has already been laid out for the fitting of an automatic recording level control. This automatic device no longer necessitates the operation of the level control with either mono or stereo working, which will enable the lesser skilled person to produce satisfactorily level-controlled recordings without previous knowledge. With automatic operation, the following actions are merely required:

1. Make ready tape recorder and set to "Recording". The input selector ③ is first set to position "Pause", so that the tape feed is not yet functioning.
2. Depress key "Auto", causing it to latch.
3. With microphone recordings, the microphone is now briefly supplied with sound of a volume corresponding to the highest level of volume to be expected from the program to be recorded later (with stereo working, both microphones). It might be said that the automatic system "measures up" at this loudest passage. With radio recordings, this "measuring up" can most suitably be effected in conjunction with a passage preceding the program to be recorded later. With the recording of discs, just briefly record the loudest passage of the disc. These measures are important, since failing these, a flattening of the contrast, i.e. of the ratio between the loudest and the softest passages of the performance, would occur. All further operations connected with the recorder are effected in the same manner as with manual recording level control.

The Two-track/Four-track Trick Method

The interchangeability of the sound-head assembly permits this trick method to be carried out, which offers the amateur using sub-standard film great advantages. With the

aid of this method, which may also be applied in stereo work, it is possible to fade-in and out with existing two-track recordings, an additional recording subsequently made with the four-track method. In this connection it is immaterial whether noise, speech or music are involved. The trick method is very simply carried out as follows:

1. First a recording with the two-track method is made.
2. Having completed the recording, respool the tape and exchange the two-track sound-head assembly against the four-track sound-head assembly.
3. Move the function switch to position "Mono 1" or "Stereo".
4. Connect the required sound source for the supplementary recording, e.g. microphone, record player or a second tape recorder.
5. Start up tape feed for playback. The recording previously made may now be monitored.
6. When the place has been reached at which the additional recording is to be faded in, the tape feed is stopped by rotating the input selector ③ to "Stop".
7. Then press the red recording key ⑪, hold it and switch the input selector to "Pause".
8. Now a test level control, as previously described, is made of the sound source which happens to be connected with the tape feed stopped, in which case the position of the level control at which full level control is reached must be noted. After this test level control, the level control itself is rotated fully to the left.
9. Start up tape feed by rotating the input selector ③ to position "Start" and fade in the supplementary recording by rotating the level control more or less quickly up to the position in which full level control is obtained.
10. Shortly before the termination of the supplementary recording, the latter is then faded out by rotating the level control to the left, and the tape feed stopped by rotating the input selector to position "Stop". The red key "Recording" will then spring back into its neutral position.
11. By rotating the input selector to position "Start", the tape feed is again started for recording and the initial recording monitored as far as the next place where it is intended to make a fade-in. The second fade-in is effected in the manner as previously described.
12. For the playback of such trick recordings, the four-track sound-head assembly is again exhanged for the two-track model, when both recordings will be picked up and played back together.

The Mixing of Sound Sources

The UHER Variocord 263 Stereo incorporates two independently regulated inputs. This provides the option for not only mixing two stereo sound sources together, but also two mono sound sources in any way desired. Once again the UHER "Sigma" level control system makes the mixing of stereo sound sources a simple and reliable matter.

Connecting the Sound Sources

Sockets ⍺ I and ⍺ II
Provided for the connection of microphones. With mono working, the microphone must always be connected to socket ⍺ I. The key "Micro" must be pressed in every instance ⑩.

Socket
For the connection of radio sets, tape recorders and record players, irrespective of whether it concerns mono or stereo equipment. When this input is used, the key "Micro" must **not** be pressed.

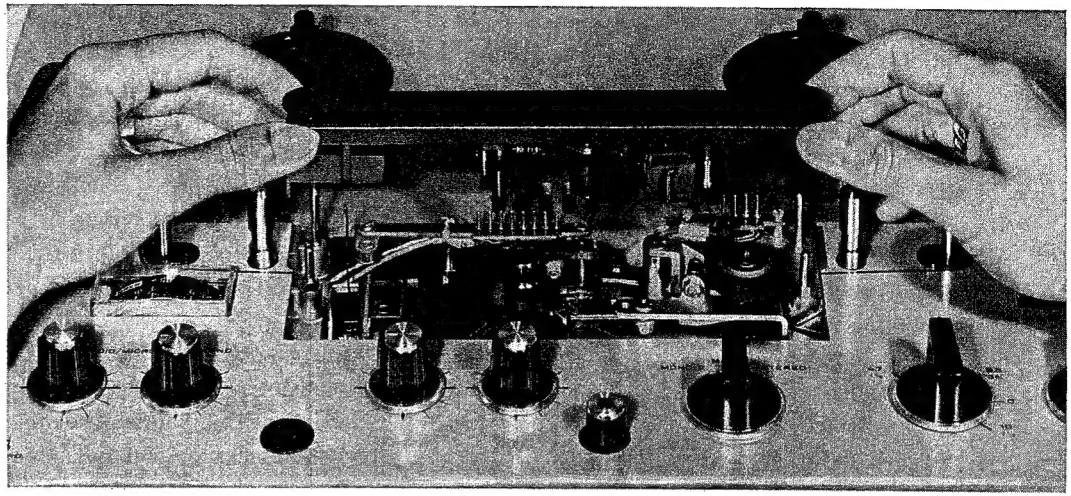
Socket
For the connection of tape recorders, tuning units with higher output voltage (more than

100 mV) and record players with integral equalizing amplifiers.

Operating the Controls "Radio/Micro" and "Phono"

The level of the recordings of all sound sources, which are connected to the sockets ⍝ I, ⍝ II and ⍝ is controlled by the "Radio/-Micro" control, whereas the level control of the recordings of sound sources, which are connected to socket ⍝, is effected with the "Phono" control.

The appropriate operation of the two controls not only permits mixing, but also the fading-in and out of different programs.



Monitoring Control

If microphones are used, it is advisable to employ an earphone as a monitoring control. In all other cases monitoring can be effected via the built-in loudspeakers of the instrument.

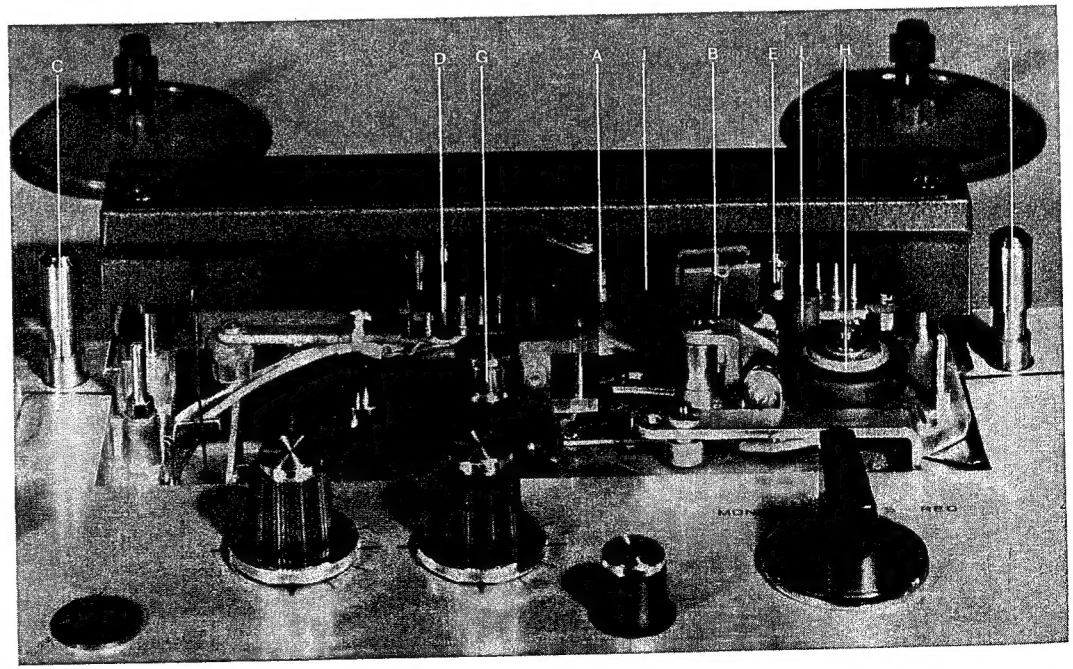
Interchanging the Head Mount

1. Withdraw front panel (bearing the UHER emblem).
2. By a rotation to the left, remove the two knurled nuts.
3. Then pull the head mount vertically upwards.
4. Push on the other head mount and tighten with the knurled nuts.
   Do not tilt the head mount!

Care and Maintenance

Your UHER Variocord 263 Stereo Tape Recorder is a highly developed precision instrument, the satisfactory operation of which depends upon the exact functioning of mechanical and electrical components. During the design of these important parts, attention was paid to the highest degree of operational reliability. Should at any time faults occur, we recommend that an experienced specialist is consulted in every instance, who will recognize faults, usually of a minor nature, with certainty and remedy them. We would warn against any interference on the part of non-experts, since this generally results in greater damage.

Since all the most important bearing points are equipped with self-lubricating sintered metal bearing bushes, the instruments do not require oiling during their entire service life. Care and maintenance in the main are restricted to checking and cleaning operations at certain intervals. Our service departments should be consulted for this purpose. The cleaning of the instrument—you will recognize the necessity for doing this by possibly noticing a deterioration in playback quality, particularly of the high notes — can easily be carried out by the user himself.
For this purpose first pull off the front sound head cover in an upward direction. The magnetic heads A, B, the tape guides C, D, E, F, the guide roller G, the pressure roller H and the capstan I are then easily accessible and may be cleaned with a matchstick wrapped in a little cotton wool and soaked in spirit.



Conversion to 60-cps Mains Supply

is obtained simply by replacing the motor pulley with the respective 60-cps version.
(Nr. 11051)